




# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/600,831	06/23/2003	Toshiki Taguchi	Q76239	6941
23373	7590	06/01/2005		
SUGHRUE MION, PLLC 2100 PENNSYLVANIA AVENUE, N.W. SUITE 800 WASHINGTON, DC 20037				
			EXAMINER SHAH, MANISH S	
			ART UNIT 2853	PAPER NUMBER

DATE MAILED: 06/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 10/600,831	Applicant(s) TAGUCHI ET AL.	
	Examiner Manish S. Shah	Art Unit 2853	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 13 April 2005.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☒ Claim(s) 12 and 13 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |                                                                                                                        |                                                                                         |
|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                            | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____                                                |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 1 & 6-11 are rejected under 35 U.S.C. 102(b) as being anticipated by Kurabayashi et al. (# US 5618338).

Kurabayashi et al. discloses an inkjet recording method and an apparatus (figure: 4) using an ink set including a four color ink and one colorless ink (figure: 8; column: 6, line: 38-41), and the color ink and the colorless ink contains a betaine compound (column: 4, line: 65-66) in an amount of from 0.05 to 20% by weight (column: 5, line: 60-66). They also disclose that the ink including a dye dissolved in water or an organic solvent (column: 6, line: 52-65; column: 7, line: 4-25).

2. Claims 1 & 6-11 are rejected under 35 U.S.C. 102(b) as being anticipated by Takizawa et al. (# US 5990227).

Takizawa et al. discloses an inkjet recording method and an apparatus (figure: 4) using an ink set including a four color ink and one colorless ink (figure: 8; column: 8, line: 60-65; column: 10, line: 5-15), and the color ink and the colorless ink contains a betaine compound (cationic surfactant) (column: 9, line: 60-66; column: 16, line: 55-60)

Art Unit: 2853

in an amount of from 0.01 to 10% by weight (column: 17, line: 1-6). They also disclose that the ink includes a dye, which is soluble in water or an organic solvent (column: 13, line: 60-67; column: 14, line: 1-25).

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1 & 6-11 are rejected under 35 U.S.C. 102(e) as being anticipated by Lee (# US 2004/0024083).

Lee discloses an inkjet recording method and an apparatus ([0028]) using an ink set including a four color ink and one colorless ink (see Abstract; [0005]-[0014]), and the color ink and the colorless ink contains a betaine compound (cationic surfactant) ([0025]) in an amount of from 0.01 to 10% by weight (see Examples). They also disclose that the ink includes a dye, which is soluble in water or an organic solvent (see Examples; [0013]).

### ***Claim Rejections - 35 USC § 103***

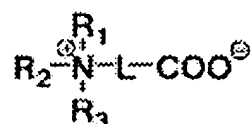
The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 2853

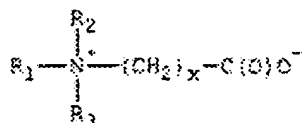
4. Claims 2-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kurabayashi et al. (# US 5618338) in view of Ma et al. (# EP 0924272).

Kurabayashi et al. teaches all the limitation of the ink set except that the betaine compound is represented by the following formula.



wherein  $R_1$ ,  $R_2$  and  $R_3$  each represents an alkyl group, an aryl group or a heterocyclic group, at least two of  $R_1$ ,  $R_2$  and  $R_3$  may be linked with each other to form a ring structure;  $L$  represents a divalent linking group; and at least one of  $R_1$ ,  $R_2$ ,  $R_3$  and  $L$  is a group having from 8 to 40 carbon atoms and at least one of  $R_1$ ,  $R_2$ ,  $R_3$  is a linear alkyl group having from 8 to 40 carbon atoms.

Ma et al. teaches that to alleviating the mottle, and smear resistance printed image, ink set includes, surfactant, which is betaine compound, and which represents the following formula ([0007],[0025]).



wherein  $x = 1-4$ ;  $R_1$  is  $C_8-C_{22}$  alkyl, aryl, or alkylaryl, linear or branched, and may contain  $-O-$ ,  $-N-$ ,  $-S-$ ,  $-C(O)-$ ,  $-C(O)O-$ ,  $-C(O)N-$ ,  $-S(O)_2N-$ , or unsaturation groups;  $R_2$  and  $R_3$  are selected from the group consisting of  $H$ ,  $C_1-C_4$  alkyl,  $C_1-C_4$  hydroxyalkyl and  $C_1-C_4$  carboxy; and  $R_2$  and  $R_3$  may be connected to form a 5-6 membered cyclic structure which may contain hetero atoms selected from the group consisting of  $N$ ,  $O$ ,  $S$ ;

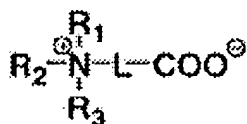
It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the betaine compound of Kurabayashi et al. by the

Art Unit: 2853

aforementioned teaching of Ma et al. in order to have a mottle free and smear resistance printed image.

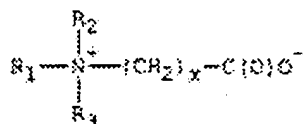
5. Claims 2-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takizawa et al. (# US 5990227) in view of Ma et al. (# EP 0924272).

Takizawa et al. teaches all the limitation of the ink set except that the betaine compound is represented by the following formula.



wherein  $R_1$ ,  $R_2$  and  $R_3$  each represents an alkyl group, an aryl group or a heterocyclic group, at least two of  $R_1$ ,  $R_2$  and  $R_3$  may be linked with each other to form a ring structure; L represents a divalent linking group; and at least one of  $R_1$ ,  $R_2$ ,  $R_3$  and L is a group having from 8 to 40 carbon atoms and at least one of  $R_1$ ,  $R_2$ ,  $R_3$  is a linear alkyl group having from 8 to 40 carbon atoms.

Ma et al. teaches that to alleviating the mottle, and smear resistance printed image, ink set includes, surfactant, which is betaine compound, and which represents the following formula ([0007],[0025]).



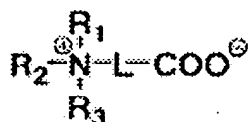
wherein  $x = 1-4$ ;  $R_1$  is  $C_8-C_{22}$  alkyl, aryl, or alkylaryl, linear or branched, and may contain -O-, -N-, -S-, -C(O)-, -C(O)O-, -C(O)N-, -S(O)<sub>2</sub>N-, or unsaturation groups;  $R_2$  and  $R_3$  are selected from the group consisting of H,  $C_3-C_4$  alkyl,  $C_1-C_4$  hydroxyalkyl and  $C_1-C_4$  carboxy; and  $R_2$  and  $R_3$  may be connected to form a 5-6 membered cyclic structure which may contain hetero atoms selected from the group consisting of N, O, S;

Art Unit: 2853

It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the betaine compound of Takizawa et al. by the aforementioned teaching of Ma et al. in order to have a mottle free and smear resistance printed image.

6. Claims 2-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lee (# US 2004/0024083) in view of Ma et al. (# EP 0924272).

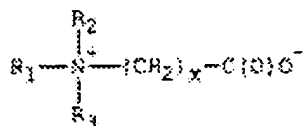
Lee teaches all the limitation of the ink set except that the betaine compound is represented by the following formula.



wherein  $R_1$ ,  $R_2$  and  $R_3$  each represents an alkyl group, an aryl group or a heterocyclic group, at least two of  $R_1$ ,  $R_2$  and  $R_3$  may be linked with each other to form a ring structure;  $L$  represents a divalent linking group; and at least one of  $R_1$ ,  $R_2$ ,  $R_3$  and  $L$  is a group having from 8 to 40 carbon atoms and at least one of  $R_1$ ,  $R_2$ ,  $R_3$  is a linear alkyl group having from 8 to 40 carbon atoms.

Ma et al. teaches that to alleviating the mottle, and smear resistance printed image, ink set includes, surfactant, which is betaine compound, and which represents the following formula ([0007],[0025]).

Art Unit: 2853



wherein  $x = 1-4$ ;  $R_1$  is  $C_3-C_{22}$  alkyl, aryl, or alkylaryl, linear or branched, and may contain  $-O-$ ,  $-N-$ ,  $-S-$ ,  $-C(O)-$ ,  $-C(O)O-$ ,  $-C(O)N-$ ,  $-S(O)_2N-$ , or unsaturation groups;  $R_2$  and  $R_3$  are selected from the group consisting of H,  $C_1-C_4$  alkyl,  $C_1-C_4$  hydroxyalkyl and  $C_1-C_4$  carboxy; and  $R_2$  and  $R_3$  may be connected to form a 5-6 membered cyclic structure which may contain hetero atoms selected from the group consisting of N, O, S;

It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the betaine compound of Lee by the aforementioned teaching of Ma et al. in order to have a mottle free and smear resistance printed image.

### ***Allowable Subject Matter***

7. Claims 12-13 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
8. The following is a statement of reasons for the indication of allowable subject matter: The ink contains a surfactant other than the betaine compound in an amount from 0.001 to 15% based on the ink.

### ***Response to Arguments***

9. Applicant's arguments filed 04/13/2005 have been fully considered but they are not persuasive. Applicant argued that the Kurabayashi et al. didn't disclose an ink



Art Unit: 2853

containing a betaine compound and a soluble dye, which is not persuasive. According to applicant's claimed invention, Kurabayashi et al. discloses all the limitation of claim 1 & 6-11 as described above. However the new reference Takizawa et al. and Lee are discloses the claimed invention also.

### ***Conclusion***

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

(1) Ogawa et al. (# JP 10-067961) discloses the water based ink composition including coloring agent and blotting preventing agent, wherein blotting preventing agent is betaine, and coloring agent is pigment (see Abstract).

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of


Art Unit: 2853

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Manish S. Shah whose telephone number is (571) 272-2152. The examiner can normally be reached on 8:00am-4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen D. Meier can be reached on (571) 272-2149. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Manish S. Shah  
Primary Examiner  
Art Unit 2853

MSS

5/25/05